

# Sulfur-Tolerant Autothermal Reforming Catalysts for Aviation Fuel, Phase I

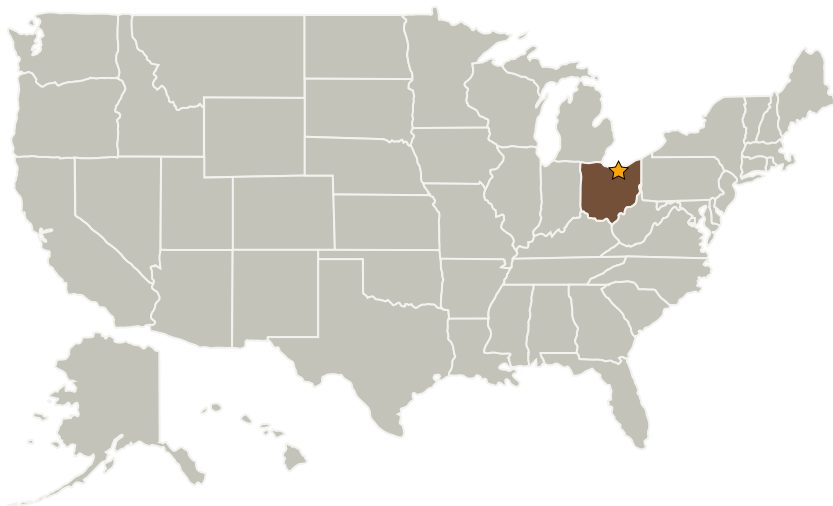
Completed Technology Project (2005 - 2005)



## Project Introduction

As solid oxide fuel cells (SOFCs) approach commercialization, interest in broader applications of this technology is mounting. While the first commercialized systems are being designed to provide 3-5 kW in stationary and automotive auxiliary power unit (APU) applications, military and aerospace users are already considering integrating SOFCs into larger, airborne systems with considerable commercial payback. SOFCs are aligned to displace inefficient, noisy, and polluting technologies such as diesel generators that will provide both economic and environmental motivation to prospective users. NexTech Materials proposes to develop sulfur-tolerant autothermal reforming (ATR) catalysts for fuel processors of SOFC systems that operate with sulfur-containing aviation (Jet-A) fuels. The Phase I work will focus on synthesis and characterization of novel composite catalysts, design and construction of a reactor for catalyst performance tests, and evaluation of the performance of experimental catalysts for autothermal reforming of Jet-A fuel. Phase II of the project will involve further optimization of catalyst formulations, scale-up of the catalyst synthesis technology, development of monolith-supporting technology for the catalysts, and evaluation of monolith-supported catalysts in prototype ATR reformers.

## Primary U.S. Work Locations and Key Partners



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## Organizational Responsibility

### Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

### Lead Center / Facility:

Glenn Research Center (GRC)

### Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

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Organizations Performing Work	Role	Type	Location
★ Glenn Research Center(GRC)	Lead Organization	NASA Center	Cleveland, Ohio
NexTech Materials, Ltd.	Supporting Organization	Industry	Lewis Center, Ohio

## Primary U.S. Work Locations

Ohio

## Project Management

**Program Director:**

Jason L Kessler

**Program Manager:**

Carlos Torrez

**Principal Investigator:**

Scott Swartz

## Technology Areas

**Primary:**

- TX03 Aerospace Power and Energy Storage
  - └ TX03.2 Energy Storage
    - └ TX03.2.2 Electrochemical: Fuel Cells